

### Test of Optical Open-Path Monitors Under Way

The verification test of five commercially available optical open-path monitors began in March in New York and will continue through April at Battelle's facilities in Columbus, Ohio. Battelle, EPA's partner for the AMS pilot, is conducting the test.

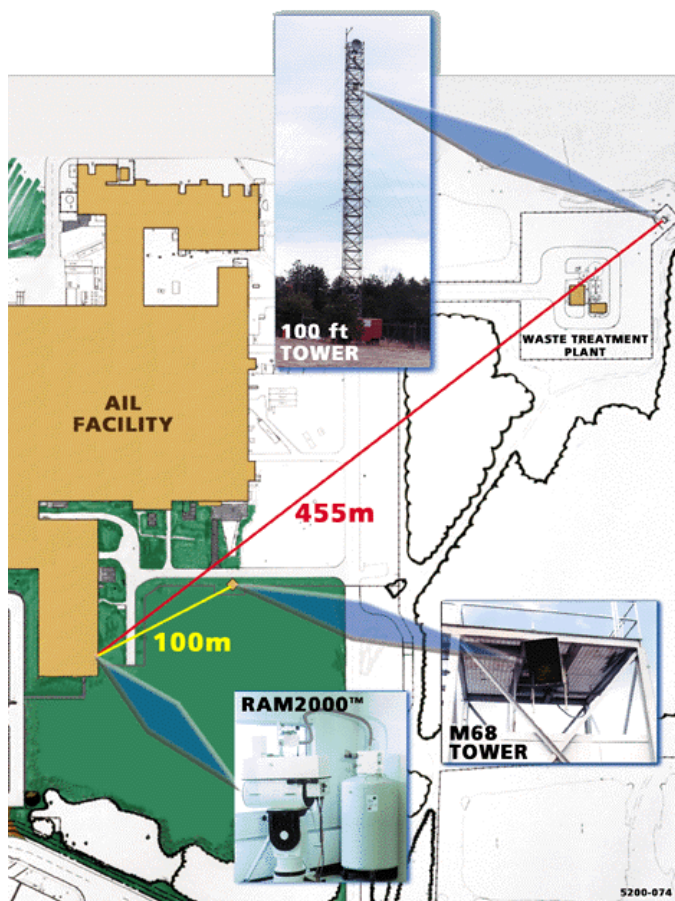
Optical open-path monitors are capable of real-time, continuous monitoring of air quality and can provide early warnings of atmospheric pollutants, such as volatile organic or inorganic chemicals, in emissions or ambient air. Their capabilities contrast with the alternative method—analysis of “grab samples”—which addresses only a single point in space, is noncontinuous, and is not real-time.

The verification test provides a range of known concentrations of various target compounds to each monitor and measures the following performance factors: detection limit, concentration linearity, accuracy, precision, and interference effects. To assess these performance factors, measurements are made at different path lengths (the distance light travels from the monitor's light source to its detector), integration times, source intensities, and numbers of replicated measurements.

The test/quality assurance (QA) plan for optical open-path monitors provides detailed information about the testing procedures and is available on the ETV web site at [http://www.epa.gov/etv/test\\_plan.htm#07](http://www.epa.gov/etv/test_plan.htm#07). Verification reports will be drafted by Battelle and reviewed by participating vendors, EPA officials, and expert peer reviewers. The final verification reports and verification statements are expected to be available by this fall. Participating companies are:

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- ♦ Opsis, Inc. Contact: Paul Stenberg, 1165 Lindavista Drive, Suite 112, San Marcos, CA 92069; phone 619-752-3005; e-mail [paulsf86@prodigy.net](mailto:paulsf86@prodigy.net); web <http://www.opsis.se>
- ♦ ThermoEnvironmental Contact: Dr. Dirk Appel, 8 West Forge Parkway, Franklin, MA 02038-3136; phone 508-520-0430; e-mail [dappel@thermoei.com](mailto:dappel@thermoei.com); web <http://www.thermoei.com>
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**At left: AIL Systems, Inc.'s RAM 2000 at work.**



The AMS pilot is one of 12 pilots in the U.S. Environmental Protection Agency's Environmental Technology Verification Program. ETV was established to accelerate the development and commercialization of improved environmental technologies through third-party verification testing and reporting of the technologies' performance. The ETV process provides purchasers and permittees with an independent assessment of the technology they are buying or permitting and facilitates multi-state acceptance. For further information, contact Helen Latham at Battelle, 505 King Ave., Columbus, Ohio 43201-2693; Phone 614-424-4062; Fax 614-424-5601; E-mail [lathamh@battelle.org](mailto:lathamh@battelle.org).

## Meet the Stakeholder Committees

Two members of the AMS pilot's stakeholder committees are spotlighted in each issue of *The Monitor* – one each from the air and water committees.



**Jennifer L. Clancy**  
**Water Stakeholder**  
**Committee**

Dr. Clancy is president and co-owner of Clancy Environmental Consultants, Inc. Her previous experience included director of water quality at the Erie County Water Authority in Buffalo, NY; director of microbiology and senior microbiologist at IEC, Inc., in Essex Junction, VT; and laboratory technician for the University of Vermont and the New York State College of Veterinary Medicine at Cornell University in Ithaca, NY. Dr. Clancy chairs Organisms in Water for the American Water Works Association (AWWA), and D19.24 Water Microbiology for the American Society for Testing and Materials. She has received research awards through the AWWA and the U.S. EPA's Office of Water. Grants awarded to Dr. Clancy total over \$2 million, including the National Assessment of Particle Removal by Filtration, Development of Performance Evaluation Sample Protocols for *Giardia* and *Cryptosporidium* for the Information Collection Rule, Innovative Electrotechnologies for Inactivation of *Cryptosporidium*, Protocol for Determining the Field Recovery of Protozoan Cysts from Source and Treated Drinking Waters, and New Approaches for Isolation of *Cryptosporidium* and *Giardia*. Dr. Clancy has published articles in publications such as the *New England Water and Wastewater News*, *Journal of American Water Works Association*, *Safe Drinking Water Newsletter*, *Journal of Microbiology*, *FEMS Microbiology Letters*, and *Applied and Environmental Microbiology*. She received her Ph.D. from McGill University and a law degree from the Vermont Law School.



**Thomas R. Roose**  
**Air Stakeholder**  
**Committee**

Dr. Roose is the managing director for environment programs at GRI (formerly called the Gas Research Institute) in Chicago. He is responsible for all aspects of the environmental research program for the U.S. natural gas industry. He gives strategic guidance regarding the gas industry's environment and safety research and interacts with regulatory agencies to ensure that regulations are based on sound science. His group develops new portable technologies that monitor and characterize pollutants in the air. Prior to his current position, Dr. Roose served in GRI's physical sciences department, where he managed research programs addressing natural gas supply, operations, and use, and guided technology transfer of basic research to applied R&D. He managed the basic combustion research program and provided company-wide technical review as needed in the engineering sciences. On a special assignment as the manager for heat pumps/space conditioning at GRI, Dr. Roose oversaw the first two gas heat pump field tests in the U.S. and was responsible for technology transfer and commercialization of other residential space conditioning technology. Together with Richard Cathriner, he holds a patent for a system for separating gas-liquid flowstreams. Dr. Roose has co-authored numerous articles and presentations, and is co-author of two books, *Stirling and Vuilleumier Heat Pumps* (McGraw-Hill, 1991) and *Handbook of Data Sheets for Solution of Mechanical Systems Problems* (Van Nostrand Reinhold, 1984). He received his M.S. and Ph.D. degrees in Mechanical Engineering from Stanford University, and his B.S. in Mechanical Engineering from the University of Illinois at Urbana.

## Hear Vendors at A&WMA

Five vendors who have participated in ETV verification tests will present their perspectives on the technology verification process during a panel discussion at the opening technical session, 10 a.m., Monday, June 19, of the Air & Waste Management Association's 93<sup>rd</sup> Annual Conference and Exhibition in Salt Lake City, UT.

Eric Koglin, EPA's manager of the ETV Site Characterization and Monitoring pilot, and Karen Riggs of Battelle, manager of the ETV Advanced Monitoring Systems pilot, will start the discussion with summaries of the ETV program and verification process.

Then vendors will describe their technologies, talk about their experiences in the ETV process, and comment on the benefits of ETV verification. Panelists are Chris Williams, Monitek; William Walter, AIL Systems, Inc.; Andre' Brown, W.L. Gore; Charles Sadowski, INFICON; and Tom Justice, Purolator Products Air Filtration Co. Attendees will be invited to ask questions after each presentation.

### Note to Vendors:

For additional information about upcoming verification tests, please contact the following Battelle staff:

**Mercury CEMs, NO/NO<sub>2</sub> analyzers, and for general information** about all AMS verification tests—Tom Kelly, 614-424-3495 or [kellyt@battelle.org](mailto:kellyt@battelle.org).

**Fine particle monitors, multi-parameter water probes**—Ken Cowen, 614-424-5547 or [cowenk@battelle.org](mailto:cowenk@battelle.org).

**Optical open-path monitors**—Jeff Myers, 614-424-7705 or [myersjd@battelle.org](mailto:myersjd@battelle.org).

**Portable water analyzers**—Adam Abbg, 614-424-5484 or [abbgya@battelle.org](mailto:abbgya@battelle.org).

## Upcoming Events

### May 9-11, 2000

EnviroExpo 2000, Boston, MA

### May 15-16, 2000

23<sup>rd</sup> Annual Conference on Analysis of Pollutants in the Environment, Pittsburgh, PA

### June 18-22, 2000

A&WMA 93<sup>rd</sup> Annual Conference & Exhibition, Salt Lake City, UT (see above).

**Visit the AMS pilot on the Web at**  
[http://www.epa.gov/etv/07/07\\_main.htm](http://www.epa.gov/etv/07/07_main.htm).